

**Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, DC 20554**

In the Matter of)	
)	
Use of Spectrum Bands Above 24 GHz For Mobile Radio Services)	GN Docket No. 14-177
)	
Establishing a More Flexible Framework to Facilitate Satellite Operations in the 27.5-28.35 GHz and 37.5-40 GHz Bands)	IB Docket No. 15-256
)	
Petition for Rulemaking of the Fixed Wireless Communications Coalition to Create Service Rules for the 42-43.5 GHz Band)	RM-11664
)	
Amendment of Parts 1, 22, 24, 27, 74, 80, 90, 95, and 101 To Establish Uniform License Renewal, Discontinuance of Operation, and Geographic Partitioning and Spectrum Disaggregation Rules and Policies for Certain Wireless Radio Services)	WT Docket No. 10-112
)	
Allocation and Designation of Spectrum for Fixed-Satellite Services in the 37.5-38.5 GHz, 40.5-41.5 GHz and 48.2-50.2 GHz Frequency Bands; Allocation of Spectrum to Upgrade Fixed and Mobile Allocations in the 40.5-42.5 GHz Frequency Band; Allocation of Spectrum in the 46.9-47.0 GHz Frequency Band for Wireless Services; and Allocation of Spectrum in the 37.0- 38.0 GHz and 40.0-40.5 GHz for Government Operations)	IB Docket No. 97-95

OPPOSITION OF WI-FI ALLIANCE

Wi-Fi Alliance®^{1/} submits this opposition to the petitions for reconsideration^{2/} that ask the Commission to reconsider its decision to allocate all of the 64-71 GHz band for unlicensed

^{1/} Wi-Fi®, the Wi-Fi logo, the Wi-Fi CERTIFIED logo, Wi-Fi Protected Access® (WPA), WiGig®, the Wi-Fi ZONE logo, the Wi-Fi Protected Setup logo, Wi-Fi Direct®, Wi-Fi Alliance®, WMM®, and Miracast® are registered trademarks of Wi-Fi Alliance. Wi-Fi CERTIFIED™, Wi-Fi Protected Setup™, Wi-Fi Multimedia™, WPA2™, Wi-Fi CERTIFIED Passpoint™, Passpoint™, Wi-Fi

use in the *Report and Order* in the above referenced proceeding.^{3/} Wi-Fi Alliance strongly supports the Commission’s years-long efforts to continue to expand spectrum resources available for unlicensed operations, which will be an integral part of the Fifth Generation (“5G”) wireless ecosystem. The Commission should not now reverse this progress, but instead dismiss or deny those Petitions for Reconsideration. The Commission extensively considered and addressed the record before it, and the Petitioners present no relevant new information or arguments that have not been considered by the Commission. Indeed, a majority of parties submitting comments in this proceeding supported the Commission’s proposal to designate the entire 64-71 GHz band for unlicensed use, creating a 14-gigahertz block of spectrum contiguous with the adjacent 57-64 GHz band.^{4/} This action will encourage innovation in unlicensed applications for 5G.

CERTIFIED Miracast™, Wi-Fi ZONE™, WiGig CERTIFIED™, Wi-Fi Aware™, Wi-Fi HaLow™, the Wi-Fi Alliance logo and the WiGig CERTIFIED logo are trademarks of Wi-Fi Alliance.

^{2/} See Competitive Carriers Association (“CCA”), Petition for Reconsideration, GN Docket No. 14-177, et al. (filed Dec. 14, 2016) (“CCA Petition”), CTIA, Petition for Reconsideration, GN Docket No. 14-177, et al. (filed Dec. 14, 2016) (“CTIA Petition” and with the CCA Petition, the “Petitions for Reconsideration”). Each of CCA and CTIA are referenced here as Petitioners and collectively as the Petitioners. The Public Notice providing the list of petitions for reconsideration released in this proceeding on December 22, 2016. *Petitions for Reconsideration of Action in Rulemaking Proceeding*, Public Notice, GN Docket No. 14-177 et al. (Dec. 22, 2016). The Public Notice was published in the *Federal Register* on December 30, 2016. *Petitions for Reconsideration of Action in Rulemaking Proceeding*, 81 Fed. Reg. 96415 (Dec. 30, 2016).

^{3/} See *Use of Spectrum Bands Above 24 GHz For Mobile Radio Services; Establishing a More Flexible Framework to Facilitate Satellite Operations in the 27.5-28.35 GHz and 37.5-40 GHz Bands; Petition for Rulemaking of the Fixed Wireless Communications Coalition to Create Service Rules for the 42-43.5 GHz Band; Petition for Rulemaking of the Fixed Wireless Communications Coalition to Create Service Rules for the 42-43.5 GHz Band; Allocation and Designation of Spectrum for Fixed-Satellite Services in the 37.5-38.5 GHz, 40.5-41.5 GHz and 48.2-50.2 GHz Frequency Bands; Allocation of Spectrum to Upgrade Fixed and Mobile Allocations in the 40.5-42.5 GHz Frequency Band; Allocation of Spectrum in the 46.9-47.0 GHz Frequency Band for Wireless Services; and Allocation of Spectrum in the 37.0- 38.0 GHz and 40.0-40.5 GHz for Government Operations*, Report and Order and Further Notice of Proposed Rulemaking, 31 FCC Rcd. 8014 (2016) (“*Report and Order*” and “*FNPRM*”).

^{4/} See Comments The Boeing Company, GN Docket No. 14-177 et al. at 11 (filed Jan. 28, 2016); Comments of Google Inc., GN Docket No. 14-177 et al. at 6 (filed Jan. 28, 2016); Comments of the National Cable & Telecommunications Association, GN Docket No. 14-177 et al. at 3 (filed Jan. 28, 2016); Comments of Open Technology Institute at New America and Public Knowledge, GN Docket No.

I. THE COMMISSION ENGAGED IN REASONED DECISION-MAKING TO RESERVE THE 64-71 GHZ BAND FOR UNLICENSED USE

CTIA claims that the Commission’s decision to allocate the 64-71 GHz band solely for unlicensed use is procedurally flawed.^{5/} Contrary to CTIA’s assertions, the Commission’s decision to allocate the 64-71 GHz band for unlicensed operations is supported by the record. As noted above, a majority of the parties that commented on this issue supported allocating the entire 64-71 GHz band for unlicensed use. In response, the Commission correctly concluded that while “it is optimal to include a balance of licensed rights and opportunities to operate on an unlicensed basis in order to meet the country’s wireless broadband needs,” permitting unlicensed operations in the 64-71 GHz band would “encourage the development of new and innovative unlicensed applications . . . while alleviating spectrum congestion from carrier networks by enabling mobile data off-loading through Wi-Fi and other unlicensed connections.”^{6/} The Commission also stated that it created a contiguous 14-gigahertz segment in order to encourage the development of innovative wireless services and products and “promote next-generation high-speed wireless links with higher connectivity and throughput, while alleviating spectrum congestion from carrier networks by enabling mobile data off-loading through Wi-Fi and other

14-177 et al. at 27 (filed Jan. 28, 2016); Comments of ViaSat, Inc., GN Docket No. 14-177 et al. at 21 (filed Jan. 28, 2016); Comments of the Consumer Technology Association, GN Docket No. 14-177 et al. at 8 (filed Jan. 27, 2016); Comments of the Fixed Wireless Communications Coalition GN Docket No. 14-177 et al. at 3 (filed Jan. 27, 2016); Comments of Microsoft Corporation, GN Docket No. 14-177 et al. at 5 (filed Jan. 27, 2016); Comments of Qualcomm Incorporated, GN Docket No. 14-177 et al. at 14 (filed Jan. 27, 2016); Comments of Straight Path Communications Inc., GN Docket No. 14-177 et al. at 6 (filed Jan. 27, 2016); Comments of Wi-Fi Alliance, GN Docket No. 14-177, et al. at 5 (filed Jan. 27, 2016); Comments of the Dynamic Spectrum Alliance, GN Docket No. 14-177 at 2 (filed Jan. 26, 2016); Comments of Facebook, Inc., GN Docket No. 14-177 et al. at 5 (filed Jan. 26, 2016); Comments of Intel Corporation, GN Docket No. 14-177 et al. at 17 (filed Jan. 26, 2016); Comments of Vubiq Networks, Inc., GN Docket No. 14-177 et al. at 3 (Jan. 26, 2016).

^{5/} CTIA Petition at 20.

^{6/} *Report and Order* at ¶125.

unlicensed connections.”^{7/} Finally, the Commission determined that WiGig devices developed for use in the 57-64 GHz band would also operate in the newly allocated 64-71 GHz band.^{8/}

The Petitioners have not demonstrated how any of these bases of the Commission’s decision are wrong. For example, CTIA claims there is limited use of the 57-64 GHz band today.^{9/} However, the use of *all* previously allocated spectrum above 24 GHz for terrestrial operations – whether licensed or unlicensed – is limited. The Commission recognized the nascent state of the WiGig market in its decision, noting that “devices using the 57-64 GHz band are just beginning to be marketed.”^{10/} Nevertheless, as Intel pointed out in this proceeding, the demand for WiGig products “has been growing so rapidly that recently the IEEE 802 has created a new 802.11ay project to extend 802.11ad, which would also include the directly adjacent 57-64 GHz band. . . . The envisioned applications and usages identified by the IEEE task group 802.11ay require additional spectrum. The growing list of both indoor and outdoor applications calls for much higher throughputs (20 Gbps and higher) than are currently attainable in the 57-64 GHz band alone.”^{11/} Moreover, the use of the 57-64 GHz band is much greater than CTIA cites.^{12/}

^{7/} *Id.* ¶125 (internal citations omitted).

^{8/} *Id.* ¶130 (citing Comments of Wi-Fi Alliance, GN Docket No. 14-177, et al. at 4 (filed Jan. 15, 2015) (expressing that extending unlicensed use to the 64-71 GHz band “would enhance the capability of WiGig technologies to support denser deployments and multiple co-located segments with increased data rate capacity”)).

^{9/} CTIA Petition at 20.

^{10/} *Report and Order* at ¶130.

^{11/} Comments of Intel Corporation, GN Docket No. 14-177 et al. at 17-18 (filed Jan. 26, 2016).

^{12/} CTIA cites to a page from the Wi-Fi Alliance website, arguing that there have been only five products certified by Wi-Fi Alliance for use in the 57-64 GHz band. CTIA Petition at 20. However, to date, 133 original certifications have been granted by the FCC for devices operating in the 57-64 GHz band, and 183 total approvals, including a growing number of WiGig devices (these include class II changes, *i.e.* different chassis configurations). *See* Equipment Authorization Search,

CTIA also claims that licensed use of the 66-71 GHz spectrum is developing at a faster pace than unlicensed use and will occur in “expeditious fashion.”^{13/} But even if that were true, it does not mean that the Commission’s decision to allocate the 64-71 GHz band for Part 15 unlicensed operations was procedurally flawed. The Commission regularly allocates spectrum where little or no development efforts have yet occurred, and the Commission’s action is often the impetus for such investment and development efforts. Further, CTIA does not cite to any evidence in the record that licensed operations could be deployed any faster than unlicensed operations in the 66-71 GHz band.

II. PETITIONERS’ SPECTRUM DISPARITY CLAIMS ARE BASED ON THE MISTAKEN ASSERTION THAT THE AMOUNT OF MILLIMETER WAVE SPECTRUM MUST BE DESIGNATED EQUALLY BETWEEN LICENSED AND UNLICENSED USE

Petitioners argue that the Commission’s allocation of unlicensed spectrum created an unequal amount of licensed and unlicensed spectrum available for potential 5G uses in the millimeter wave bands. Petitioners base this claim on a narrowly-focused “gigahertz parity” comparison of the bands under consideration in the first phase of this proceeding alone. Petitioners conclude that the Commission should therefore reconsider its decision with respect to the 64-71 GHz band and make available more millimeter wave spectrum for exclusive licensed use.^{14/} However, the Commission considered and rejected the argument that anything less than the entire 64-71 GHz band should be available for unlicensed uses, agreeing with commenters

<https://apps.fcc.gov/oetcf/eas/reports/GenericSearch.cfm> (Search Application Purpose filed for “Original Grant;” search Application Status field for “Grant Issued;” search Frequency Range in MHz field for 57000 to 64000 (and uncheck “Exact Match”); and click “Start Search.”).

^{13/} CTIA Petition at 21.

^{14/} CCA Petition at 5-9; CTIA Petition at 19-24.

that “a lesser amount of spectrum would limit the growth potential of 60 GHz applications.”^{15/}

The Petitioners’ spectrum disparity claims are based on false premises. Allocation of licensed and unlicensed spectrum is properly made with a broader view across all bands, not within the narrow confines of a specific proceeding. In fact, Commission proceedings have historically, addressed licensed spectrum on the one hand or unlicensed spectrum on the other with little or no objections related to “gigahertz parity” in those proceedings. It is not realistic for CTIA to now insert that criterion in a particular proceeding where the Commission has appropriately taken the need for unlicensed spectrum into consideration.

A mechanical application of a spectrum parity test within a given proceeding also fails to take into consideration the current use of adjacent spectrum bands (in this case, the 57-64 GHz band), the benefit of creating larger spectrum blocks for unlicensed applications, and various other factors noted by the Commission in the *Report and Order*.^{16/} Additionally, as the Commission made clear in the *Notice of Proposed Rulemaking* in this proceeding, the *Report and Order* is a step in making millimeter wave spectrum available for 5G.^{17/} Therefore, when noting the amount of spectrum that the Commission made available for licensed and unlicensed

^{15/} *Report and Order* at ¶130.

^{16/} See, e.g., *id.* (“we determine to make these frequencies available for unlicensed use based on our analysis of U.S.-specific factors,” and specifically rejecting a “gigahertz parity” comparison).

^{17/} See *Use of Spectrum Bands Above 24 GHz For Mobile Radio Services; Establishing a More Flexible Framework to Facilitate Satellite Operations in the 27.5-28.35 GHz and 37.5-40 GHz Bands; Petition for Rulemaking of the Fixed Wireless Communications Coalition to Create Service Rules for the 42-43.5 GHz Band; Petition for Rulemaking of the Fixed Wireless Communications Coalition to Create Service Rules for the 42-43.5 GHz Band; Allocation and Designation of Spectrum for Fixed-Satellite Services in the 37.5-38.5 GHz, 40.5-41.5 GHz and 48.2-50.2 GHz Frequency Bands; Allocation of Spectrum to Upgrade Fixed and Mobile Allocations in the 40.5-42.5 GHz Frequency Band; Allocation of Spectrum in the 46.9-47.0 GHz Frequency Band for Wireless Services; and Allocation of Spectrum in the 37.0- 38.0 GHz and 40.0-40.5 GHz for Government Operations*, Notice of Proposed Rulemaking, 30 FCC Rcd. 111878 at ¶1 (2016) (“Today we take further steps to promote a flexible regulatory environment for the next generation of wireless services.”).

uses in the *Report and Order*, Petitioners fail to consider the action the Commission contemplates in the *FNPRM*. There, the Commission has proposed to allocate far more spectrum for licensed uses – potentially 17.7 gigahertz of spectrum for licensed fixed or mobile use.^{18/} It is unreasonable for Petitioners to review the Commission’s spectrum scorecard based on this proceeding alone. Moreover, the Commission’s decision to allow unlicensed use of the 64-71 GHz band offers all 5G innovators, including the Petitioners, opportunity to access these frequencies.

III. CONCLUSION

Wi-Fi Alliance applauds the Commission’s actions to date in this proceeding, including the allocation of the entire 64-71 GHz band for unlicensed use. That decision is supported by evidence in the record that unlicensed use of the 64-71 GHz band will encourage the development and use of next-generation unlicensed applications in the millimeter wave bands. In order to promote emerging technologies and continue efforts to meet the country’s demand for wireless broadband services, the Commission correctly concluded that more unlicensed spectrum is needed at this time. Moreover, the Commission has not foreclosed the possibility of licensing other millimeter wave bands for licensed services, as indicated by the *FNPRM*. The Commission should accordingly dismiss or deny the Petitions for Reconsideration.

^{18/} *FNPRM* at ¶369.

Respectfully submitted,

A handwritten signature in black ink, appearing to read 'Edgar Figueroa', with a long horizontal flourish extending to the right.

Edgar Figueroa
President and CEO

WI-FI ALLIANCE
10900-B Stonelake Blvd.
Suite 126
Austin, TX 78759
(512) 498-9434
efigueroa@wi-fi.org

January 31, 2017

CERTIFICATE OF SERVICE

I, Alyssia J. Bryant, hereby certify that on January 31, 2017 a copy of the foregoing Opposition of Wi-Fi Alliance was served by first-class mail, postage paid, on each of the following:

Steven K. Berry

Rebecca Murphy Thompson

Elizabeth Barket

Competitive Carriers Association

805 15th Street, NW, Suite 401

Washington, D.C. 20005

Brian M. Josef

Thomas C. Power

Scott K. Bergmann

John A. Marinho

CTIA

1400 16th Street, NW, Suite 600

Washington, D.C. 20036

/s/ Alyssia J. Bryant

Alyssia J. Bryant